DEFENSE THREAT REDUCTION AGENCY

DTRA

Making the World Safer

S&T Component of the CBDP

Dr Chuck Gallaway
DTRA/CB

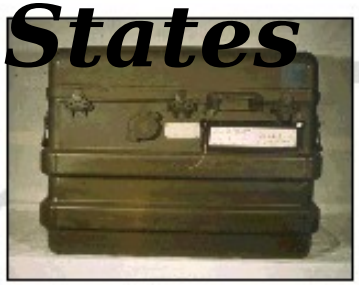
Worldwide Chemical Conference
23 Oct 03

DTRA's Mission-

Reduce the present threat
Prepare for future threats

We must make the world safer, by reducing the threat of weapons of mass destruction

Weapons of mass destruction are the most serious threat to the United States



Nuclear Weapons
. . .difficult to acquire, devastating in use

Chemical Weapons
. . .cheap and easy to make

Biological Weapons
. . .use available technology and are potentially catastrophic

DTRA's mission…

Reduce the present threat
Prepare for future threats

Using a full spectrum of tools to reduce the present threat and prepare for future threats

Arms Control:

Inspecting threats and stopping them at national borders

Threat Reduction:

Dismantling the former Soviet nuclear arsenal in place and eliminating Iraqi weapons of mass destruction

Technology Development:

Developing, testing and fielding offensive and defensive technologies

Chemical and Biological Defense:

Assuring operations in hostile environments

Combat Support:

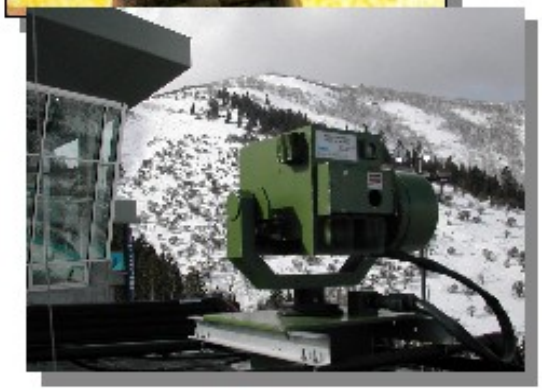
Assessing vulnerabilities, assuring the nuclear deterrent

Making the World Safer

The CB threat is changing

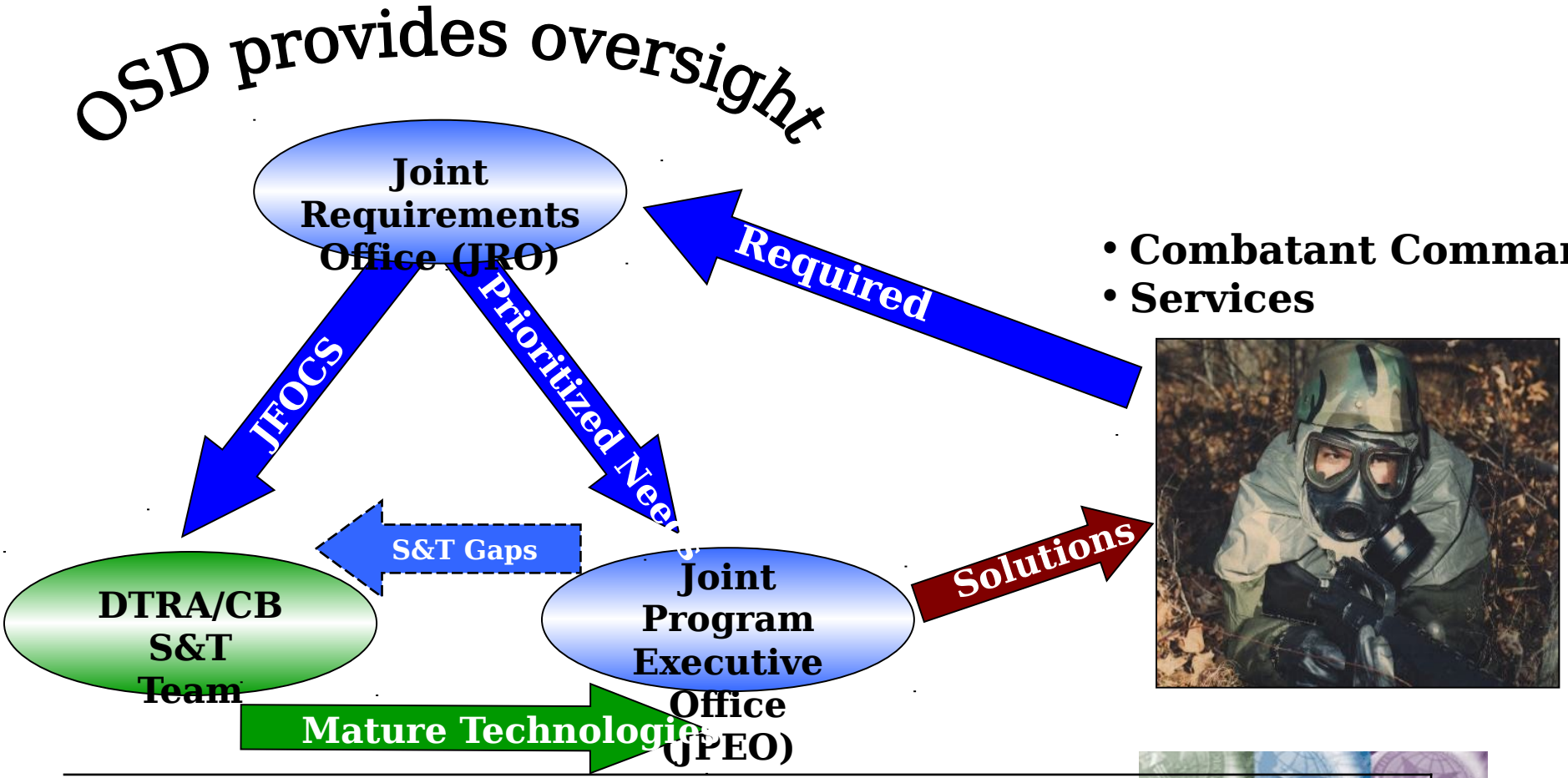
- **Warfighter – during conflict**
  - **Traditional**
  - **Emerging**
- **Expanded to include terrorism**
  - **DoD facilities**
  - **Homeland Defense**

USD(AT&L) ADM expanded DTRA's role in CBDP



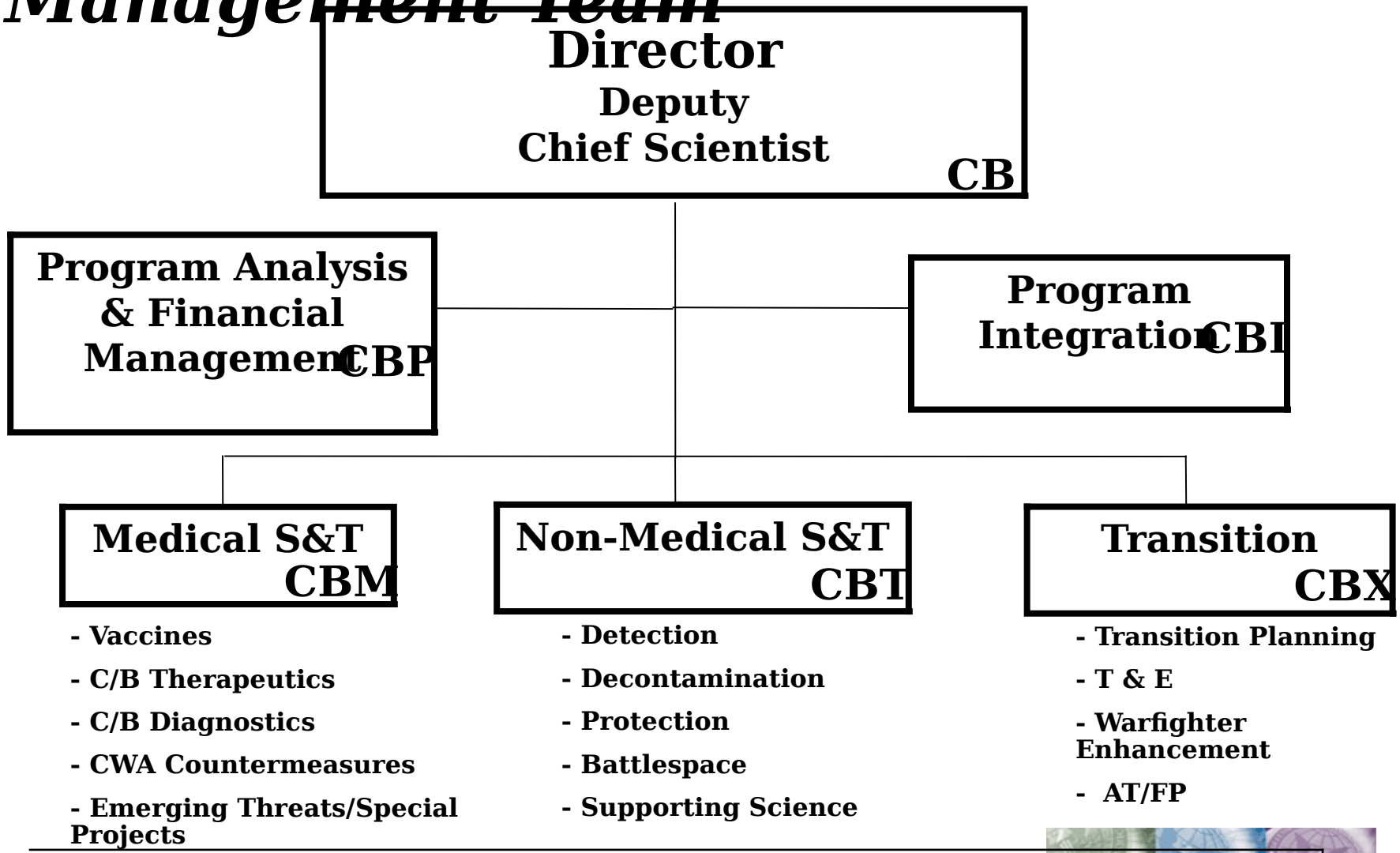
- **19 Sep 02 - USD (AT&L) Acquisition Decision Memorandum (ADM)**
  - **". . . significant changes are required in management of the DoD CBDP."**
- **22 Apr 03 - USD (AT&L) signed Implementation Plan**
  - **Establishes the Joint Requirements Office in Joint Staff**
  - **Makes DTRA responsible for CB S&T and CBDP Financial Management**
  - **Establishes the Joint Program Executive Office in the Army**

S&T team is an integral member of the CBDP team



DTRA is organized according to mission functions

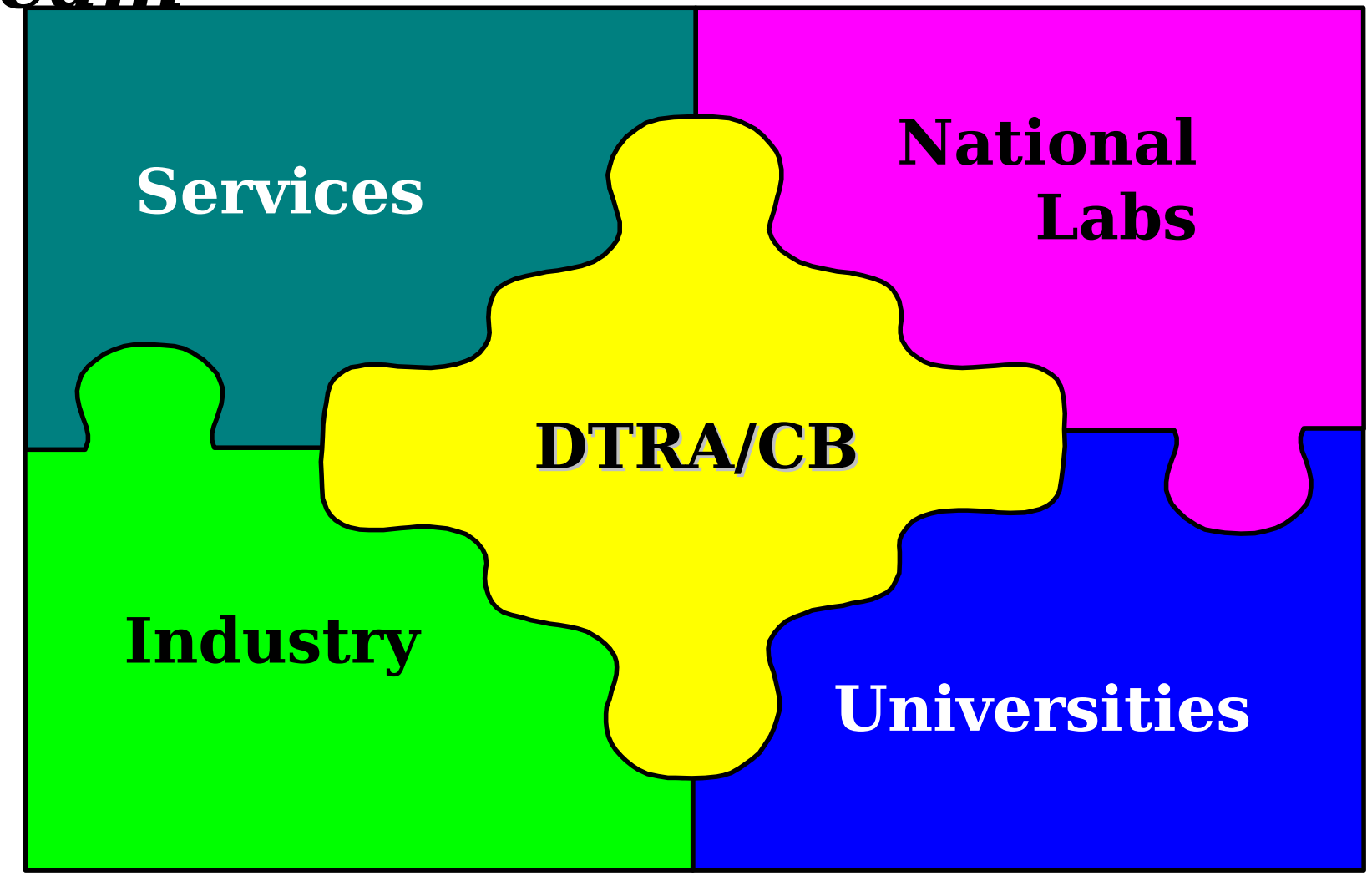
Chemical and Biological S&T Management Team



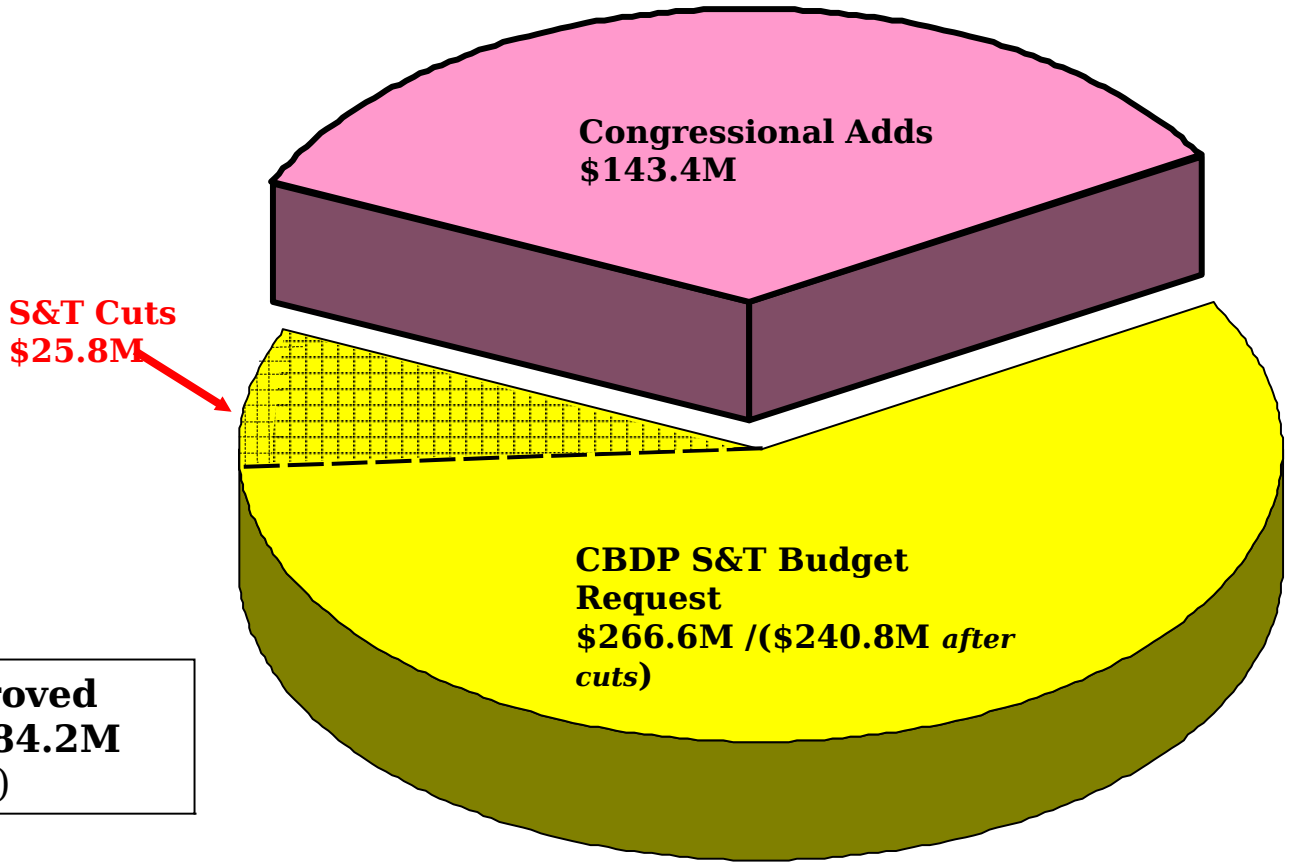
DTRA is assisted by "outside" talent

- **Board of Advisors**
  - **Provide advice and recommendations to CB S&T Director**
  - **Flag Officers and SES's from JRO, JPEO, and Service S&T communities**
- **Strategic Working Group**
  - **Translate higher level strategic guidance for use in S&T program planning**
  - **Action officer representatives of BOA members**
- **Capability Managers**
  - **Manage all dimensions of S&T program in respective areas**
  - **15 managers support medical, non-medical, and transition divisions**

CB S&T Execution Team

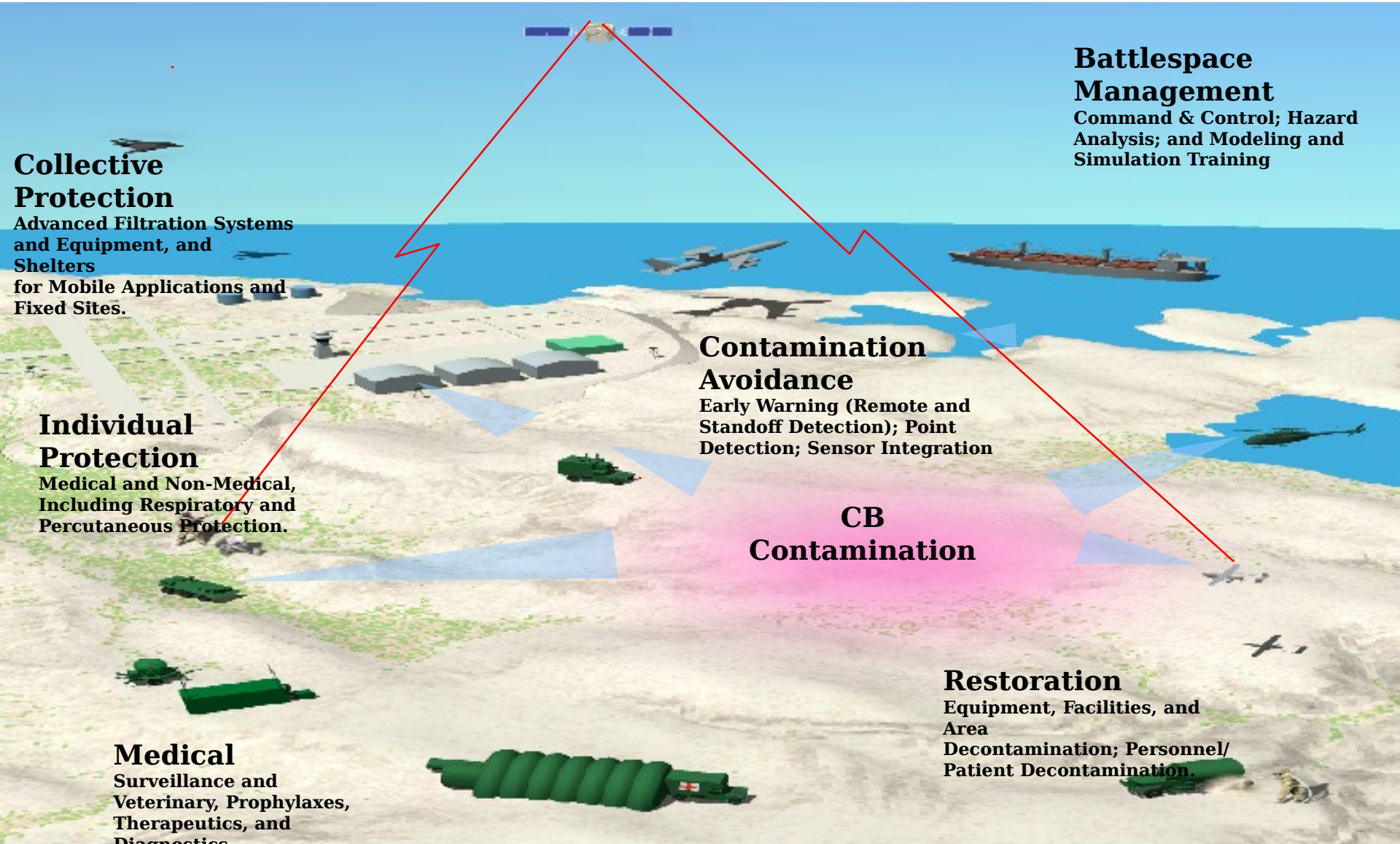


is making a large investment in S&T in

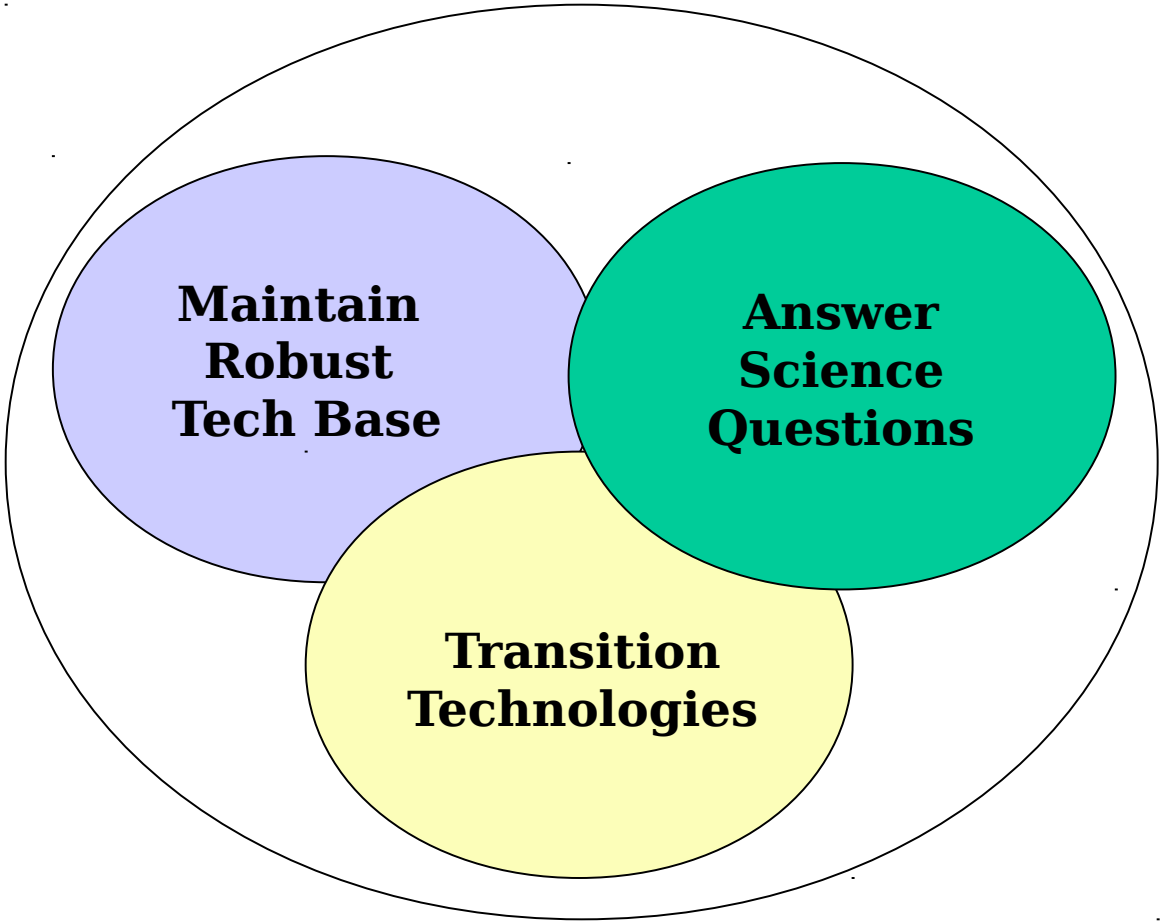


FY04 Approved Budget: $384.2M
(9/24/03)

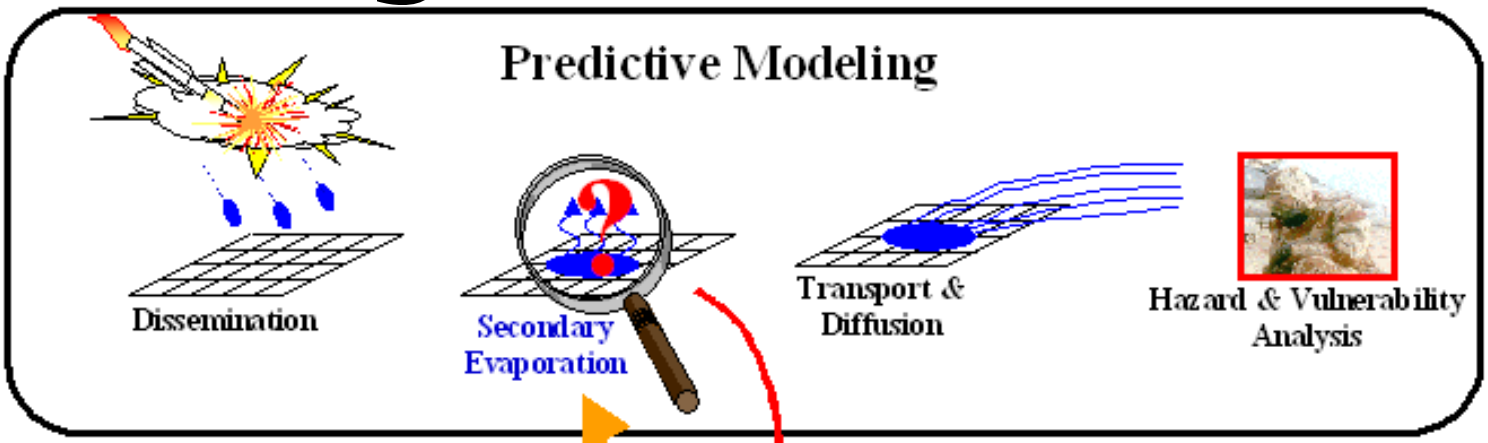
CB Defense is a System of Systems


Battlespace Management
Command & Control; Hazard Analysis; and Modeling and Simulation Training
Collective Protection
Advanced Filtration Systems and Equipment, and Shelters for Mobile Applications and Fixed Sites.
Contamination Avoidance
Early Warning (Remote and Standoff Detection); Point Detection; Sensor Integration
Individual Protection
Medical and Non-Medical, Including Respiratory and Percutaneous Protection.
CB Contamination
Restoration
Equipment, Facilities, and Area Decontamination; Personnel/ Patient Decontamination.
Medical
Surveillance and Veterinary, Prophylaxes, Therapeutics, and

S&T Efforts


Maintain
Robust
Tech Base
Answer
Science
Questions
Transition
Technologies

Agent Fate



Modeling Data Rqmts

Wind tunnel
(controlled, parametric, multi-rep tests; scalability)

Annulus trials
(validate wind tunnel data)

Lab analysis
(agent/substrate interaction)

The solution
- ID evap processes
- ID critical params
- Characterize variability
- Validate scaling assumptions

Model predictions
- Accurate
- Validated

Surf Evap Database

Surface evap data
(vapor flux, temp, wind, RH, agent, substrate, chemistry, dropsize, etc.)

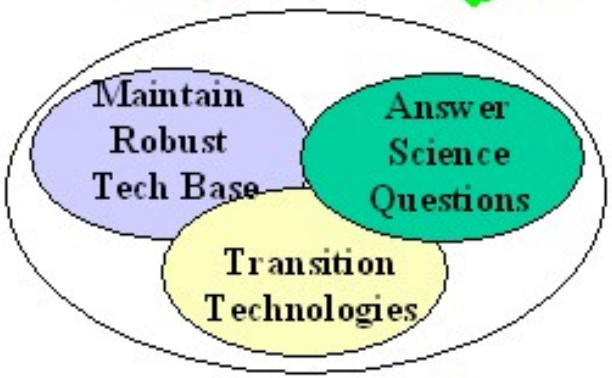
Other CB areas requiring this data (i.e., decon, detection, protection, etc.)

CB S&T will be an integrated program

Medical S&T Efforts

Pretreatments & Prophylaxes

Diagnostics



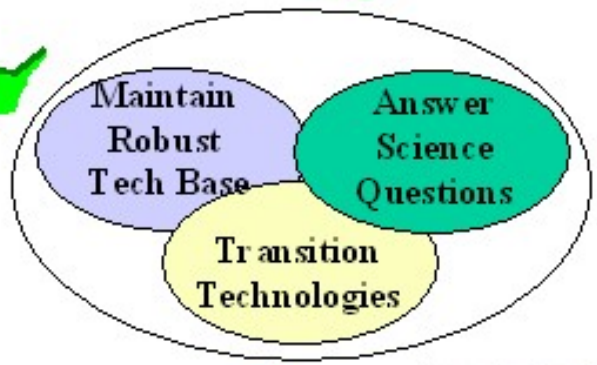
Therapeutics

Provide medical solutions for military requirements to sustain and protect the force in CB environment

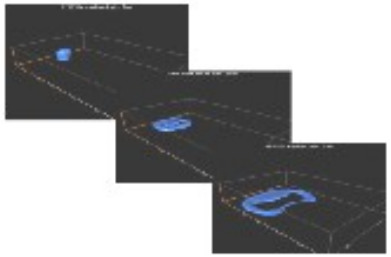
Non-Medical S&T business area

Detection

Supporting Science & Technology



Protection



Modeling & Simulation

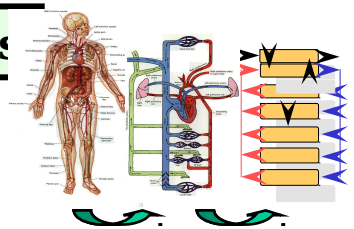
Decontamination

Low-level chemical warfare agent research will support operational risk management decisions

Medical portion of this joint medical/non-medical research effort will explore the potential for transient or sustained systemic toxicity of low dose exposure(s) to CWAs and predict human morbidity.

Inhalation Studies

SBCCOM



Health Effects

USAMRICD

Three Major Thrusts

Integration Studies

One Product

Science-Based Exposure Standards for Deployed Forces

- **Detector limits & materiel requirements**
- **How "dirty" is clean enough?**
- **Diagnostics and therapeutics**

Studies include:

- **Behavioral and neurological consequences of exposure to CWAs**
- **Conc-Time Profiles**
- **Biomarkers**
- **Route/Species Extrapolation**

Improving CBDP S&T

- **Improve alignment of RDT&E with warfighter needs**
- **Provide innovative, timely S&T products**
- **Improve transition of S&T to advanced development**

We will transition products out of S&T

Medical S&T

Non-Medical S&T

Evaluate Mature Technologies

Integrate with the Acquisition Process

Meet the Operator's Needs

TRANSITION

We conduct high visibility demonstration projects for the warfighter

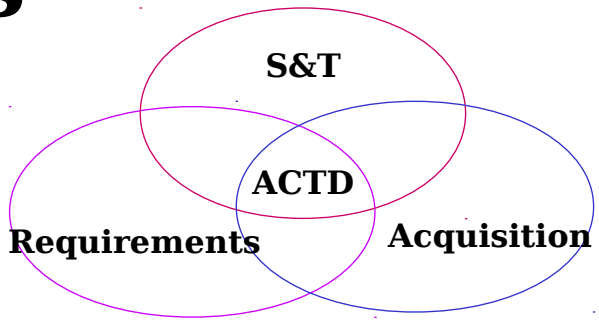
Large Frame Aircraft Decon Demonstration (LFADD)

Restoration of Operations (RestOps)

Contamination Avoidance of Sea Ports of Debarkation (CASPOD)

Joint Service Installation Pilot Project (JSIPP)

ACTD Evaluation Process



- **DTRA, JPEO CB and JRO CBRN Defense assess ACTD candidate proposals**
- **Evaluation process**
  - **Eliminate proposals not suitable for ACTD nomination**
  - **Identify proposals which are consistent with CBDP requirements, technology maturation and approach, and can be accommodated in an Acquisition Strategy**
  - **Identify those proposals in the initial screening which have issues which must be resolved to either meet ACTD acceptance or result in a decision to eliminate that candidate**
  - **Identify Joint Warfighting Exercise/Limited Objective Experiment options**

JRO CBRN | **DTRA/CB** | **JPEO CBD**

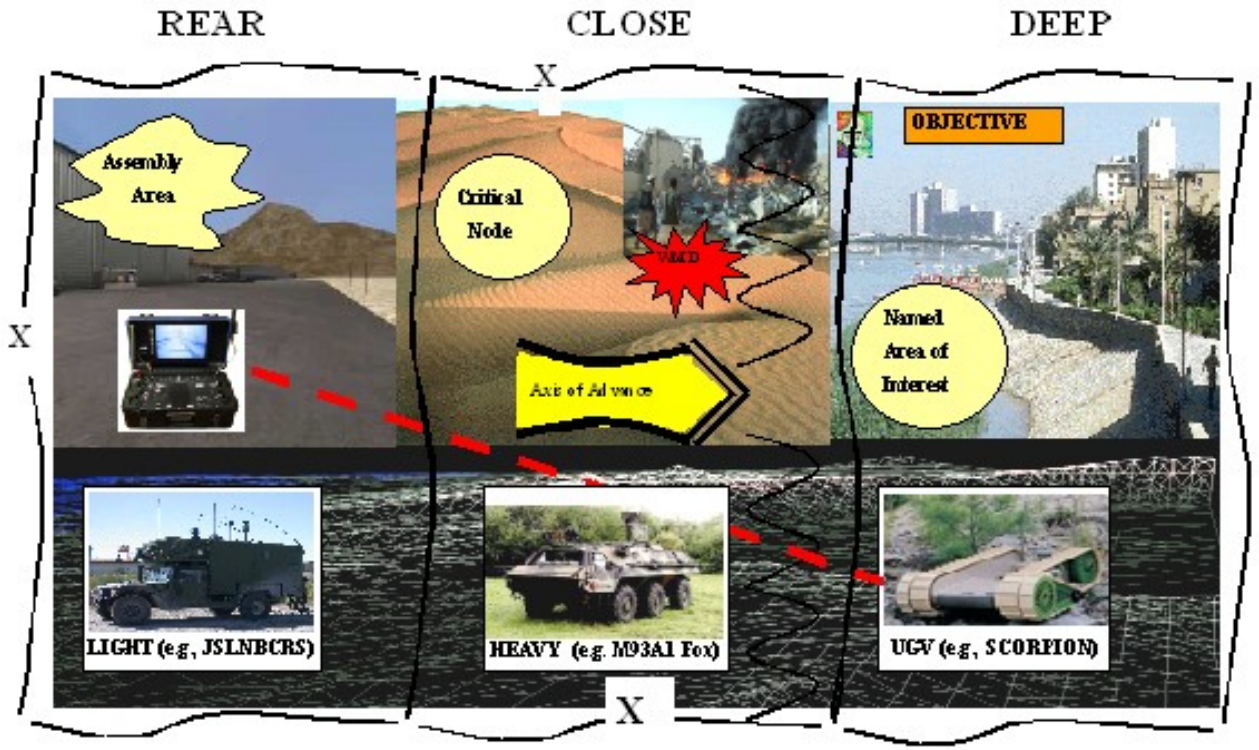
Is there an existing requirement or capability need in the CBDP?

Assess ACTD Concept
Assess technical maturity
Assess Risks

Is there a supporting acquisition strategy or program in which to transition the ACTD technology?

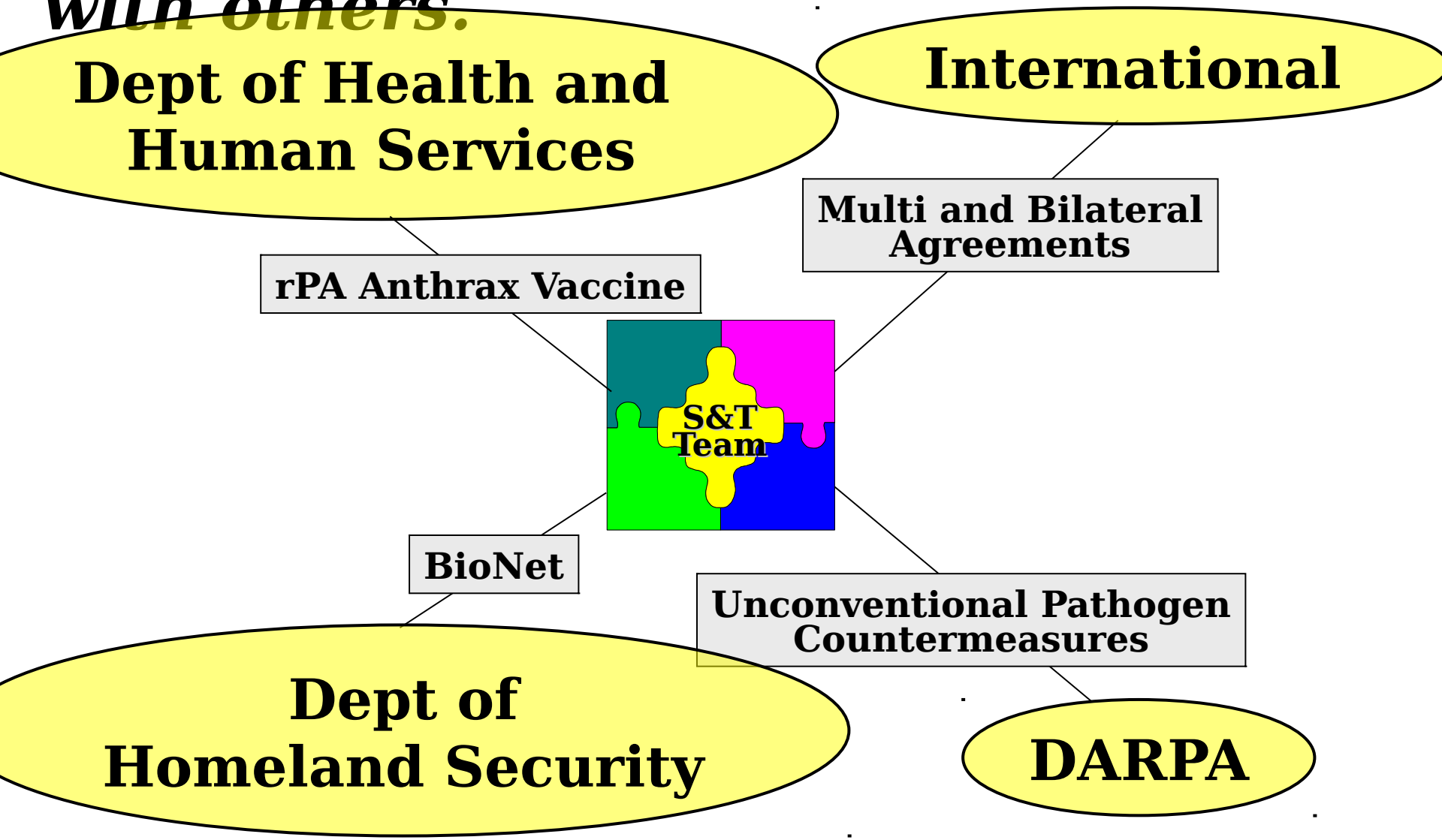
CBRN Unmanned Ground Reconnaissance (CUGR) ACTD

FY05 ACTD Candidate



Demonstrate non-contact Chemical Surface Detection technology in manned and unmanned ground platforms for NBC recon units

We are collaborating and cooperating with others.



Bottom line

- S&T is an integral member of the CBDP team
- Building the S&T team
- Full community involvement is essential

must get quality products to our warfighters - - - quick